

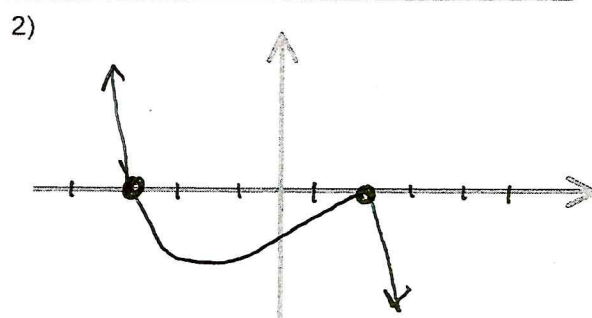
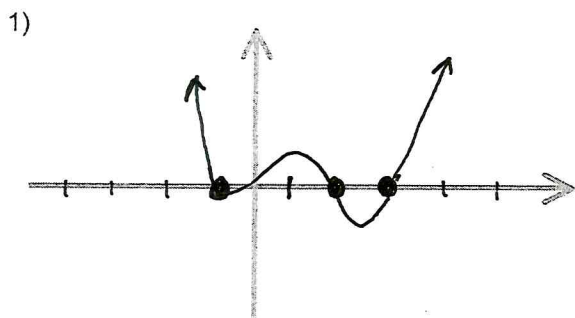
HONORS

Graphing Polynomial Functions from Factored Form

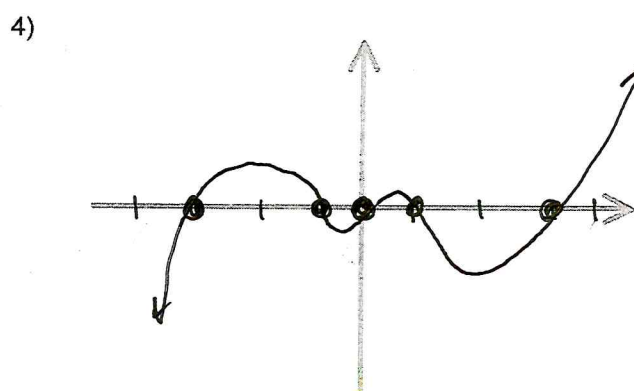
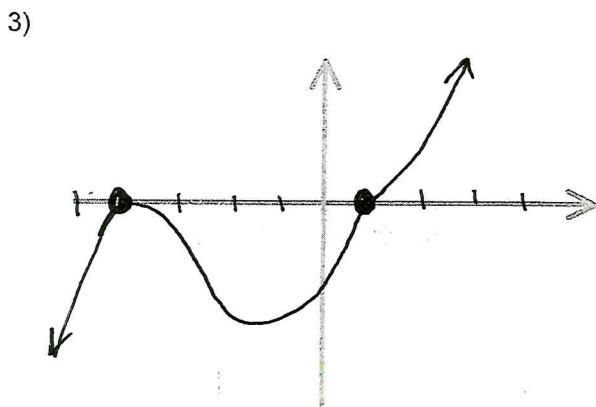
Name Key

Sketch the graph of each polynomial function.

Function	Positive or Negative	Even or Odd	Zeros	Multiples?
1) $f(x) = (x+1)^2(x-2)(x-3)$	+	even	$x = -1$ $x = -1$ $x = 2$ $x = 3$	$x = -1$ mult of 2
2) $f(x) = -2(x+3)^3(x-2)^2$	-	odd	$x = -3$ $x = -3$ $x = -3$ $x = 2$ $x = 2$	$x = -3$ mult of 3 $x = 2$ mult of 2

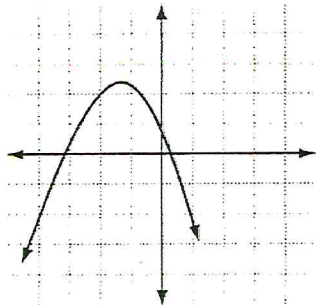


Function	Positive or Negative	Even or Odd	Zeros	Multiples?
3) $f(x) = (x-1)^3(x+4)^2$	+	odd	$x = 1$ $x = 1$ $x = 1$ $x = -4$ $x = -4$	1 has mult of 3 -4 has mult of 2
4) $f(x) = x(x+3)(x+1)(x-1)(x-3)$	+	odd	$x = 0$ $x = -3$ $x = -1$ $x = 1$ $x = 3$	None

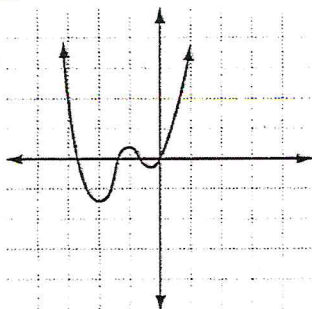


Use the graphs to fill in the table

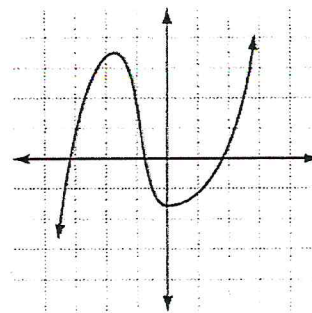
1.



2.



3.

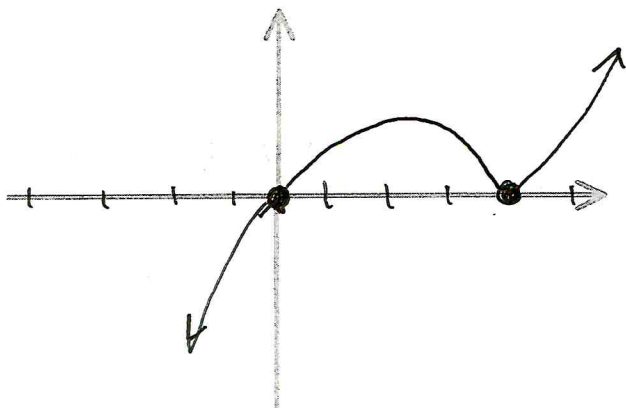


Function	degree (circle one)	Lead coef. (circle one)	End Behavior (Left and Right)	How many x-intercepts?
1.	Odd <u>Even</u>	Positive <u>negative</u>	L: $x \rightarrow -\infty, y \rightarrow -\infty$ R: $x \rightarrow +\infty, y \rightarrow -\infty$	2
2.	Odd <u>Even</u>	<u>Positive</u> negative	L: $x \rightarrow -\infty, y \rightarrow +\infty$ R: $x \rightarrow +\infty, y \rightarrow +\infty$	4
3.	<u>Odd</u> Even	<u>Positive</u> negative	L: $x \rightarrow -\infty, y \rightarrow -\infty$ R: $x \rightarrow +\infty, y \rightarrow +\infty$	3

Fill in the table for each of the following functions, then sketch the graphs.

Function	Positive or Negative	Even or Odd	Zeros	Multiples?
4. $f(x) = x(x-4)^2$	+	odd	$x=0$ $x=4$ $x=4$	4 has mult 2
5. $f(x) = -x^2(x-2)(x+1)$	-	even	$x=0$ $x=0$ $x=2$ $x=-1$	0 has mult 2

4)



5)

